

## ABSTRACT

The present invention provides a 4-step method for inducing differentiation of embryonic stem cells into functioning cells comprising 1) expanding ES cells; 2) inducing Embryoid Bodies in the presence of leukemia inhibitory factor and basic FGF; 3) selection expanding of the EBs and 4) differentiation. According to the present invention, ES cells can be differentiated into either insulin producing pancreatic islet like cell clusters or nerve like cells. Thus obtained functioning cells may be potential sources of donor cells in cell transplant therapy for many patients.